

**WHAT IS CLAIMED IS:**

1. An apparatus for monitoring performance of an industrial process comprising:  
a service portal for collecting, transmitting and analyzing parameter data from process  
field devices comprising:

a network connection that connects to a process control system of the  
industrial process;

a remote collector that collects parameter data from process field devices;

a processor that identifies, sorts, and stores the collected parameter data;

a communications module for transmitting the stored parameter data to a  
remote monitoring station for analysis.

2. The apparatus of claim 1 wherein the network connection is a wireless network  
connection.

3. The apparatus of claim 1 wherein the network connection is an optical network  
connection.

4. The apparatus of claim 1 wherein the network connection is a radio frequency  
network.

5. The apparatus of claim 1 wherein the remote collector collects the parameter data  
from a workstation.

6. The apparatus of claim 1 wherein the processor performs simple analysis of the  
parameter data.

7. The apparatus of claim 1 wherein the processor performs trends analysis of the  
parameter data.

8. The apparatus of claim 1 wherein the processor performs statistical analysis of the  
data.

9. The apparatus of claim 1 wherein the processor models the parameter data.

10. The apparatus of claim 1 wherein the processor develops a simulation of the  
5 process.

11. A method of optimizing industrial production comprising:  
providing an onsite production process parameter monitoring device to a client for  
monitoring the parameters of a set of field devices associated with a client production process  
10 wherein the monitoring device can transmit process data offsite for analysis;

associating the monitoring device with a data output of each field device within the  
set of field devices, wherein each field device gathers process parameter data associated with  
an operation performed and transmits the data to the monitoring device associated with the  
process;

15 monitoring each field device through a plurality of performances of the process, while  
gathering parameter data from each performance; and  
transmitting the gathered data offsite for analysis.

12. The method of claim 11 further comprising maintaining an on site central data  
20 collection device wherein all of the data associated with the process is collected for on site  
use and offsite use.

13. The method of claim 11 wherein associating the monitoring devices with a data  
output of every individual field device includes:

25 defining a potential data output stream from each field device; and  
establishing a data communications link between each field device and the associated  
monitoring device.

14. The method of claim 13 wherein defining a potential data output stream includes:  
30 identifying relevant process parameters; and  
ensuring that each relevant process parameter is being monitored.

15. The method of claim 13 wherein establishing a data communications link between each field device and the associated monitoring device includes linking the field devices to the associated monitoring device using any combination of wireless, infrared, RF, direct connect, POTS, Ethernet, LAN, WAN, internet, intranet, fiber optic, or optical communications.

16. The method of claim 11 wherein gathering parameter data for each performance of a field device includes:

splitting the data stream from each field device into individual process parameter data;

creating a data historian for each parameter, for each field device and for each production process; and

storing the data in an on site central data collection device and in an offsite storage and analysis device.

17. The method of claim 11 wherein the monitoring devices transmit the data offsite using any combination of wireless, infrared, RF, direct connect, Ethernet, LAN, WAN, internet, intranet, fiber optic, or optical communications.

18. A method of optimizing industrial production comprising:

providing a plurality of onsite production process parameter monitoring devices to a client for monitoring the parameters of a set of field devices associated with each client product wherein each monitoring device can transmit process data to an offsite analysis group;

associating the monitoring devices with a data output of each field device in the set of field devices, wherein each field device gathers process parameter data associated with the operation performed and transmits the data to the monitoring device associated with the process;

monitoring each field device through a plurality of performances of the process, while gathering parameter data from each performance;

transmitting the gathered data offsite for analysis; and

analyzing the gathered data offsite using process experts, wherein the process experts develop optimal physical parameter ranges for each field device of each client production process.

5           19. The method of claim 18 further comprising an on site central data collection device wherein all of the data transmitted offsite is collected for on site use.

          20. The method of claim 18 further comprising transmitting the optimal physical parameters for each field device of each client production process to the client.

10

          21. The method of claim 20 further comprising making adjustments to a field device controller for each field device, wherein the adjustments are based on the analysis of the data performed by the experts.

15           22. The method of claim 21 wherein the adjustments are made while the process is running.

          23. The method of claim 21 wherein the adjustments are made while the process is idle.

20

          24. The method of claim 21 wherein the adjustments result in optimal productivity for the process.

25           25. The method of claim 18 wherein the field devices transmit data to the monitoring device using any combination of wireless, infrared, RF, direct connect, Ethernet, LAN, WAN, internet, intranet, fiber optic, or optical communications.

30           26. The method of claim 18 wherein the monitoring devices transmit the data offsite using any combination of wireless, infrared, RF, direct connect, Ethernet, LAN, WAN, internet, intranet, fiber optic, or optical communications.

27. The method of claim 18 wherein analyzing the data includes developing a statistical model for the data.

28. The method of claim 18 wherein analyzing the data includes developing  
5 simulation models of the process using the data.

29. The method of claim 18 wherein analyzing the data includes doing a trend analysis of the data.

10 30. A method of improving a manufacturing client's business performance comprising:  
determining a current baseline business performance for the client including  
identifying targeted areas of improvement in the manufacturing area;  
analyzing potential economic gain that may be realized for each targeted area;  
15 identifying dynamic performance measures for each targeted area;  
monitoring industrial process parameters within the target areas and developing  
baseline dynamic performance measures of the target areas;  
analyzing the baseline dynamic performance measures to identify areas for  
optimization within the industrial process; and  
20 optimizing industrial process parameters based on the analysis of the baseline  
measures.

31. The method of claim 30 wherein determining a current baseline business  
performance for the client includes on site study of the plant process.

25

32. The method of claim 30 wherein identifying targeted areas of improvement  
includes identification of deficient performance of the process using economic analyses.

33. The method of claim 32 wherein using economic analyses includes defining how  
30 potential changes will yield an increased return on investment over the baseline.

34. The method of claim 30 wherein identifying dynamic performance measures for each targeted area includes identifying measurable process parameters that are directly related to economic performance of the targeted area.

5           35. The method of claim 30 wherein monitoring industrial process parameters within the target areas and developing baseline dynamic performance measures of the target areas includes:

          observing multiple performances of the processes associated within each target area;  
and

10           evaluating economic effects of the industrial process parameters.

36. The method of claim 30 wherein monitoring industrial process parameters includes establishing a baseline optimum value for each process parameter based on multiple performances of each process.

15           37. The method of claim 30 wherein analyzing the baseline dynamic performance measures to identify areas for optimization within the industrial process includes evaluating the economic effects on the product of the industrial process parameters.